

Wilson Bro. & Co.

Civil Engineers & Architects,

435 Chestnut Street,

Gentlemen:-

Philadelphia, April 29 1887.

In accordance with the conference at the Mint yesterday

between Mr. Fox, Supt. of Mint, Mr. Geo. H. Sellers, of Edgemoor Iron Co. Mr. H.P. Frances of Kensington Engine Works, Lim., and our Mr. Darrach, the following modifications were discussed:-

Locate the feed pumps and heater in the engine room adjacent to the boiler room wall. This arrangement, to dispense with the hot well and horizontal feed water heater (under boiler pressure) specified, and instead, supplying a vertical feed water heater and hot well combined. By the proposed new arrangement the exhaust steam, from all the engines and pumps, discharge into the cast iron base of heater, and thence up through vertical copper heating pipes to an exhaust pipe discharging above the roof. The cast iron base wall to be provided with two openings, one 12 inches diameter to which will be connected, 12" pipe receiving the exhaust steam from two 150 H.P. and one 50 H.P. engines. The exhaust pipes, from these engines will be carried to the heater on a slightly descending grade. The other opening will be 8" diameter, and taken out of the bottom of cast iron base of heater, arranged to catch condensation from exhaust pipes - and drips from engines. From this 8" opening an eight inch cast iron pipe, to be carried on a descending grade to the passage to Boiler Room; at this point, an outlet to be provided, to allow a connection to be made with a 4½" exhaust pipe, to be laid in West passage from the Porter Allen, Electric Light engine, which opening must, for the present, be closed. A Six inch opening also to be provided to connect pipe to blow off well herein-after to be described.

The exhaust pipe and drips from feed pumps to be connected

with the 8" pipe - where most convenient.

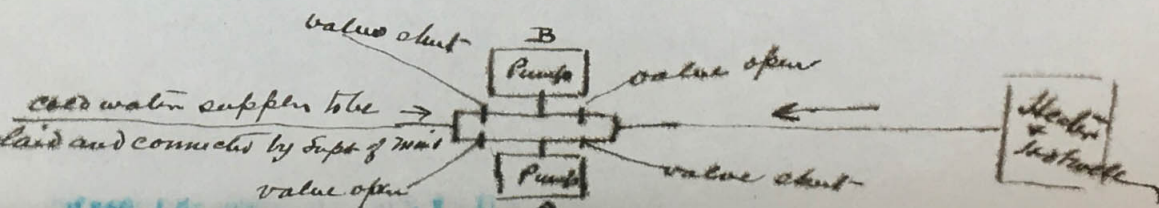
The six inch pipe before mentioned will be carried in a duct to the blow off well in boiler room: it should be provided in the old pump room (under driveway) with a 2 inch exhaust nozzle to connect a pump ^{used} ~~and~~ to pump out wells in the Mint.

The Water Chamber of Heater to be provided with a nozzle to connect return water ^{pipe} from radiators &c., a cold water supply to be independent of the supply to pump and an overflow pipe discharging into well in boiler room to be provided with check valve.

In the construction of the heater proper provision to be made for contraction and expansion, the steam and water spaces to be without inter-communication; - gauge glass, proper valves, connections &c. ^{to be} provided ^{and checked.}

The feed pump to be connected with the feed water heater and also to the cold water supply, so arranged that either one or the other may take its water from the heater or the cold water supply.

Thus --



Pump A pumping cold water :
: or vice versa.
Pump B " hot "

The discharge from these pumps to be so arranged that either may be used to pump into the boilers or to the building - The main steam pipe from the boilers - (10 inch diameter) to be carried through the engine room wall at a point about 16' 4" South of the

North wall of boiler room, and provided in the engine room with a nozzle from which steam will be taken for the Electric Light Engine ~~heaving~~ 4 inch steam nozzle, the steam for feed pumps and for supplying live steam to exhaust pipe (main heating pipe for building). This last connection must be so arranged that a regulating value may be placed between the live steam pipe and the exhaust pipe - and a nozzle must be provided on the exhaust pipe above heater for this connection.

It was understood that the Edgemoor Iron Company is to erect heater, pumps and their connections &c. and the pipes from Heater to well in boiler room.

The Kensington Engine Works, Lim. are to submit a price for the exhaust pipe from the two 150 H.P. and one 50 H.P. engines to the heater and the exhaust pipe from the heater discharging above roof. The Superintendent of Mint is to lay $4\frac{1}{2}$ " exhaust pipes from Electric Light Engine to the $4\frac{1}{2}$ " outlet on the pipe from heater to blow off well, hereinbefore provided - and, to erect and connect the steam pipe from same engine to the outlet provided on main steam pipe in engine room; also to make the steam and exhaust connection of a pump, to be located in old pump room, ^{see specifications.} which is to be used for pumping out wells.

After thinking over the matter we would recommend all of the suggestions, were it not for the fact that it is intended to use the exhaust steam for heating the building, (with a pressure of five pounds) - in which case, during 8 months of the year, the above arrangement would produce a pressure of 5 pounds or thereabout in the blow off well; this should be prevented, and we would therefore in default of a better arrangement, suggest that the exhaust of all the engines and the pipe from blow off well be carried

to the heater above the drip outlet, that the pipe from the blow off well, be controlled by valve to be open when the boilers are blown off and during the summer months - also to provide a vent from the water chamber, ^{of the water heater} to the outside air;- also that the drip from the heater be carried independently to the blow off well and provided with a trap; it is not necessary to take this precaution in case of the pump to be used in pumping out the wells, as its use is so intermittent that no special inconvenience will result.

In the arrangement suggested no provision has been made to vent the water chamber of heater to the outside atmosphere so as to keep it entirely without pressure. Such a provision is necessary to insure a proper circulation in radiators used to heat the building with exhaust steam. We are not satisfied that a vertical heater is the best form to be used; unless its diameter is great, the water line will be so high that it will be difficult, if not impracticable, to return the water of condensation from radiators, located in the front or South end of the Building, to the proposed heater, and therefore suggest that a horizontal heater is the most economical form to use.

If this objection is satisfactorily overcome, Mr. Fox, Supt. of the Mint directs me to say that he approves of the change requested by Mr. Sellers of Edgemoor Iron Co. and desires an early answer from the Kensington Engine Works, Lim.

Hoping these matters will receive your immediate attention and awaiting an early answer,

Yours respectfully,

*Edgemoor Brothers
J.*

Copies sent to : Edgemoor Iron Co.

: and

: Kensington Engine Works, Lim.

P.S. it may be possible to vent blow off well by pipe running up 4
W. Union Telegraph Building. C.S.D.

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435 Chestnut Street,
Philadelphia,
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The exhaust pipe and drips from feed pumps to be connected with the 8" pipe – where most convenient.

The six inch pipe before mentioned will be carried in a duct to the blow off well in boiler room: it should be provided in the old pump room (under driveway) with a 2 inch exhaust nozzle to connect a pump used to pump out wells in the Mint.

The Water Chamber of Heater to be provided with a nozzle to connect return water pipe from radiators &c., a cold water supply to be independent of the supply to pump and an overflow pipe discharging into well in boiler room to be provided with check valve.

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[See original images for diagram.]

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Pump B “ hot “ :

The discharge from these pumps to be so arranged that either may be used to pump into the boilers or to the building – The main steam pipe from the boilers – (10 inch diameter) to be carried through the engine room wall, at a point about 16’ 4” South of the North wall of boiler room, and provided in the engine room with a nozzle from which steam will be taken for the Electric Light Engine leaving 4 inch steam nozzle, the steam for feed pumps and for supplying live steam to exhaust pipe (main heating pipe for building). This last connection must be so arranged that a regulating value may be placed between the live steam pipe and the exhaust pipe – and a nozzle must be provided on the exhaust pipe above heater for this connection.

It was understood that the Edgemoor Iron Company is to erect heater, pumps and their connections &c. and the pipes from Heater to well in boiler room.

The Kensington Engine Works, Lim. Are to submit a price for the exhaust pipe from the two 150 H.P. and one 50 H.P. engines to the heater and the exhaust pipe from the heater discharging above roof. The Superintendent of Mint is to lay 4 ½” exhaust pipes from Electric Light Engine to the 4 ½” outlet on the pipe from heater to blow off well, hereinbefore provided – and, to erect and connect the steam pipe from same engine to the outlet provided on main steam pipe in engine room; also to make the steam and exhaust connection of a pump, to be located in old pump room on specification, which is to be used for pumping out wells.

After thinking over the matter we would recommend all of the suggestions, were it not for the fact that it is intended to use the exhaust steam for heating the building, (with a pressure of five pounds) – in which case, during 8 months of the year, the above arrangement would produce a pressure of 5 pounds or thereabout in the blow off well; this should be prevented, and we would therefore in default of a better arrangement, suggest that the exhaust of all the engines and the pipe from blow off well be carried to the heater above the drip outlet, that the pipe from the blow off well, be controlled by valve to be open when the boilers are blown off and during the summer months – also to provide a vent from the water chamber of feed water heater to the outside air; - also that the drip from the heater be carried independently to the blow off well and provided with a trap; it is not necessary to take this precaution in case of the pump to be used in pumping out the wells, as its use is so intermittent that no special inconvenience will result.

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Wilson Bro. & Co.
D.

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: Kensington Engine Works, Lim.

P.S. it may be possible to vent blow off well by pipe running up to Union Telegraph. Building.
O.S.D.